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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,130	06/30/2000	Erik J. Shahoian	IMM1P086B	2149

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PATENT DEPARTMENT (IMMERSION)
KILPATRICK STOCKTON LLP
1001 WEST FOURTH STREET
WINSTON-SALEM, NC 27101

EXAMINER

LESPERANCE, JEAN E

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 02/24/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,130

Applicant(s)

SHAHOIAN, ERIK J.

Examiner

Jean E Lesperance

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15-17 and 24-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13, 15-17, 24-28 and 31-39 is/are rejected.
- 7) ☒ Claim(s) 10, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 11-13, 15-17, 24-28, 31-35, 37, and 39 are rejected under 35 U.S.C. 102 (e) as being unpatentable over U.S. Patent # 6,199,587 ("Shlomi et al.").

As for claims 1, 11, and 31, Shlomi et al. teach a second ferrous core Fig.19 (661) corresponding to a core member, having a central projection; a coil Fig.19 (635) corresponding to a coil wrapped around said central projection; a magnet which is able to move axially Fig.19 (655) corresponding to the magnet; a plastic material Fig.19 (658) is situated between the magnet (655) and the core (661) corresponding to a gap and an elastic material disposed in said gap and configured to limit a range of motion of

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said magnet in said degree of freedom; the inputs (636) with letters G and H where voltage can be applied and G represents the ground member attached to said core member.

As for claims 2 and 26, Shlomi et al. teach some non-rigid materials like rubber (column 6, lines 29-35) and plastic Fig.19 (658) used as mechanical insulators corresponding to elastic material is foam. And using foaming is inherent and well known in the art.

As for claims 3 and 27, Shlomi et al. teach a microcontroller Fig.18a (600) electrically connected to sensor 37 which connected to the coil (not shown) corresponding to a controller electrically connected to said coil for generating a drive signal.

As for claim 4, Shlomi et al. teach a plastic member Fig.19 (658) corresponding to a first flexible member attached to said magnet and said core member.

As for claim 5, Shlomi et al. teach the inputs (636) with letters G and H where voltage can be applied and G represents the ground member attached to said core member; a plastic material Fig.19 (658) is situated between the magnet (655) and the core (661) corresponding to a first flexible member attached to said magnet and said ground member.

As for claims 6, 13, and 24, Shlomi et al. teach a magnet Fig.19 (655) and a plunger subassembly Fig.19 (640) which is a solid surface corresponding to the grounded surface and the plastic member 658 is attached to the magnet and the plunger.

As for claims 7 and 15, Shlomi et al. teach Fig.19 which shows an actuator arrangement for a solenoid valve, which operates plunger 42 corresponding to said grounded surface comprises an actuator.

As for claims 8 and 16, Shlomi et al. teach the upper housing 670 has an inner cylinder 639 in which magnet 655 is able to move axially (column 15, lines 63-65) with the magnet moves in the direction of an axis which can be linear corresponding to magnet is configured to move linearly.

As for claims 9 and 17, Shlomi et al. teach the move downwards is assisted by the fact that the movable iron ring 54 (rotation) now has an identical pole to that of the facing side of magnet 72 (column 10, lines 9-12) corresponding to a magnet is configured to move rotationally.

As for claim 12, Shlomi et al. teach a plastic member Fig.19 (658) corresponding to an elastic material disposed in said gap.

As for claims 25, 28, and 32, Shlomi et al. teach a second plastic material perpendicular to the plastic material (658) connected to the lower seat Fig.19 (48) corresponding to a second flexible member attached to said magnet and said ground member and said core member.

As for claim 33, Shlomi et al. teach the inputs (636) with letters G and H where voltage can be applied and G represents the ground member attached to a grounded surface where it is connected corresponding to said ground member comprises a grounded surface.

As for claim 34, Shlomi et al. teach the inputs (636) with letters G and H where voltage can be applied and G represents the ground member attached to a housing corresponding to said grounded surface comprises a surface of a housing.

As for claims 35 and 37, Shlomi et al. teach an actuator arrangement for a solenoid valve (Figs.1, 2, and 19) corresponding to the actuator of said manipulandum and disposed within said housing.

As for claim 39, Shlomi et al. teach the plunger may be further connected to the iron core by a second biasing connector, and the second biasing connector may be attached to bias the core downwardly with respect to the plunger such that when both plunger and core are moving upwardly and upward motion of the plunger is arrested suddenly, the two biasing connectors are operable to cause a cushioned deceleration of the core (column 3, lines 3-9) corresponding to the elastic material is configured to restrict a range of motion of the magnet or core member.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36 and 38 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent 6,199,587 ("Shlomi et al.") in view of U.S. Patent # 5,857,492 ("Salamun").

As for claims 36 and 38, Shlomi et al. teach the magnetic forces of a device in which the hollow cylindrical member 56 is not of ferrous material (column 12, lines 66 and 67). Accordingly, Shlomi et al. teach all the claimed limitations as recited in claims 36 and 38 with the exception of providing a manipulandum comprises a joystick.

However, Salamun teaches a manual operable control device, such as a joystick Fig.1 (10) corresponding to a manipulandum comprises a joystick.

It would have been obvious to utilize a manual operable such as a joystick as taught by Salamun in the solenoid valve with permanent magnet because this would provide an electromagnetic friction lock for the control device.

Allowable Subject Matter

Claims 10, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claimed invention is directed to an actuator. Claims 10 and 29 identify a uniquely distinct feature "said core comprises a first curved surface; said magnet comprises a second curved surface". Claim 30 identifies a uniquely distinct feature "an elastic material positioned in said gap formed between said first curved surface and said second curved surface". The closest arts, Shlomi et al. and Salamun as discussed above, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Response to Amendment

Applicant's arguments filed 12-9-2003 have been fully considered but they are not persuasive. The applicant's representative argued that the prior art, Shlomi et al., does not teach an elastic material disposed in said gap and configured to limit a range of motion of said magnet. Examiner disagrees with the applicant that the prior art does not teach an elastic material disposed in said gap and configured to limit a range of motion of said magnet because Shlomi et al. teach a plastic material (658) situated between the core member (661) and the magnet (655). As can be seen in the prior art, Fig.19, the plastic material 658 is coupled to the magnet and the core 661 with the range of motion of the magnet is limited. The applicant has be more specific on how the range of motion is limited by said magnet because it is too vague the way it is claimed. The applicant's representative argued that the prior art, Shlomi et al., does not teach a first flexible member attached to said core and said magnet. Examiner disagrees because Shlomi et al. teach a plastic material (658) situated between the core member (661) and the magnet (655). The plastic material (658) is interpreted as being the first flexible member. Therefore, the rejection is maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (703) 308-6413. The examiner can normally be reached on from Monday to Friday between 8:00AM and 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709 .

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance


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Date 2-19-2004



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600